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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/827,523	04/20/2004	Keerthi Bhushan K N	200400479-2	2763

22879 7590 03/26/2007 HEWLETT PACKARD COMPANY P O BOX 272400, 3404 E. HARMONY ROAD INTELLECTUAL PROPERTY ADMINISTRATION FORT COLLINS, CO 80527-2400	**EXAMINER** SMITH, CHENECA

ART UNIT	PAPER NUMBER
2109	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/26/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

	Application No.	Applicant(s)
Office Action Summary	10/827,523	K N ET AL.
	Examiner	Art Unit
	Cheneca P. Smith	2109

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on *20 April 2004*.

2a) ☐ This action is **FINAL**.   2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1-35* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *1-35* is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☒ The drawing(s) filed on *20 April 2004* is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All   b) ☐ Some * c) ☐ None of:

      1. ☐ Certified copies of the priority documents have been received.

      2. ☐ Certified copies of the priority documents have been received in Application No. _____.

      3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date *12/14/2004*.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____ .

DETAILED ACTION

Claim Rejections - 35 USC § 101

1.   35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 25-35 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claim 25 teaches a "template". It is unclear if the instructions are necessarily in executable form, and therefore, the template has been reasonably interpreted as descriptive material, per se. In addition, Claim 25 fails to claim the template recorded on an appropriate computer readable medium so as to be structurally and functionally interrelated to the medium and permit the function of the descriptive material to be realized. Because the template taught in claim 25 does not constitute a process, machine, manufacture or a composition of matter, it does not fall within a statutory category of invention and is consequently rejected as nonstatutory.

Claims 26-32 mirror the deficiencies of claim 25 and are also rejected as non-statutory.

Claim 33 teaches a "computer program". It is unclear if the instructions are necessarily in executable form, and therefore, the program has been reasonably interpreted as descriptive material, per se. In addition, Claim 33 fails to claim the template recorded on an appropriate computer readable medium so as to be structurally and functionally interrelated to the medium and permit the function of the descriptive material to be realized. Because the program taught in claim 33 does not

constitute a process, machine, manufacture or a composition of matter, it does not fall

within a statutory category of invention and is consequently rejected as nonstatutory.

Claims 34 and 35 mirror the deficiencies of claim 33 and are also rejected as

· non-statutory.

Claim Rejections - 35 USC § 102

2.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3.   Claims **1-5, 7-8, 10,13-17,19-20, 22, 25-30, 33-34** are rejected under 35

U.S.C. 102(b) as being anticipated by Scalzi et al. (US Patent 6,075,937).

As to claim 1, Scalzi teaches a method of translating binary code ·

instructions from a source format to a target format for processing by a target processor,

said method comprising the steps of:

identifying a source instruction (see column 6, lines 9-10),

selecting a translation template corresponding to said identified source

instruction, said template providing a set of target format instructions semantically

equivalent to said identified source instruction (see column 6, lines 10-11 and column

12, lines 18-21),

translating said identified instruction in accordance with said template (see

column 6, lines 11-14), and

outputting said translated instruction for processing by said target processor

(see column 6, lines 14-17).

As to claim 2, Scalzi teaches a method according to claim 1 in which said

source and target instructions include a control part and a data part and said control

part being used in said identification step to identify an instruction (see column 22, lines

50-52).

As to claim 3, Scalzi teaches a method according to claim 2 in further

comprising a transformation step in which said data part from said source instruction is

transformed into said corresponding data part or parts of said set of target format

instructions (see column 3, lines 2-7).

As to claim 4, Scalzi teaches a method according to claim 3 in which said

transformation step is carried out in accordance with a bit filling routine associated with

said template (see column 18, lines 14-18 and column 19, lines 46-49 and 57-60).

As to claim 5, Scalzi teaches a method according to claim 4 in which said

bit filling routine is uniquely associated with said template (see column 18, lines 14-18

and column 19, lines 46-49 and 57-60).

As to claim 7, Scalzi teaches a method according to claim 2 in which said

source instruction control parts are each concatenated to provide a unique identifier and

said templates are indexed in accordance with said identifiers (see column 14, lines 31-

40).

As to claim 8, Scalzi teaches a method according to claim 7 in which said templates are indexed by said unique identifiers in a look up table (see column 12, lines 56-59).

As to claim 10, Scalzi teaches a method according to claim 1 in which said templates are provided by software procedure calls (see column 10, lines 14-17).

As to claim 13, Scalzi teaches an apparatus for translating binary code instructions from a source format to a target format for processing by a target processor, the apparatus comprising:

an instruction identifier for identifying a source instruction (see column 6, lines 9-10),

a template selector for selecting a translation template corresponding to said identified source instruction, said translation template providing a set of target format instructions semantically equivalent to said identified source instruction (see column 6, lines 10-11 and column 12, lines 18-21),

a translator for translating said identified instruction in accordance with said template (see column 6, lines 11-14), and

an output buffer for outputting said translated instruction for processing by said target processor (see column 6, lines 14-17).

As to claim 14, Scalzi teaches an apparatus according to claim 13 in which said source and target instructions include a control part and a data part and said instruction identifier uses said control part to identify instruction (see column 22, lines 50-52).

As to claim 15, Scalzi teaches an apparatus according to claim 14 in which in said translator is operable to transform said data part from said source instruction into said corresponding data part or parts of said set of target format instructions (see column 3, lines 2-7).

As to claim 16, Scalzi teaches an apparatus according to claim 15 in which said transformation is carried out in accordance with a bit filling routine associated with said template (see column 18, lines 14-18 and column 19, lines 46-49 and 57-60)

As to claim 17, Scalzi teaches an apparatus according to claim 16 in which said bit filling routine is uniquely associated with said template (see column 18, lines 14-18 and column 19, lines 46-49 and 57-60).

As to claim 19, Scalzi teaches an apparatus according to claim 14 in which said source instruction control parts are concatenated to provide a unique identifier and said templates are indexed in accordance with said identifiers (see column 14, lines 31-40).

As to claim 20, Scalzi teaches an apparatus according to claim 19 in which said templates are indexed by said unique identifiers in a look up table (see column 12, lines 56-59).

As to claim 22, Scalzi teaches an apparatus according to claim 13 in which said templates are provided by software procedure calls (see column 10, lines 14-17).

As to claim 25, Scalzi teaches template for use in a binary code translator for translating binary code instructions from a source format to a target format for processing by a target processor, said template comprising a template identifier uniquely associating said template to a source instruction (see column 12, lines 56-59) and a set of instructions in said target format semantically equivalent to said source instruction (see column 2, lines 15-20).

As to claim 26, Scalzi teaches a template according to claim 25 in which said source and target instructions include a control part and a data part and said template identifier is derived from said control part of said source instruction (see column 22, lines 50-52, and lines 57-61).

As to claim 27, Scalzi teaches a template according to claim 26 in which in said template is associated with a set of instructions to transform said data part from said source instruction into said corresponding data part or parts of said set of target format instructions (see column 3, lines 2-7).

As to claim 28, Scalzi teaches a template according to claim 27 in which said transformation is carried out in accordance with a bit filling routine associated with said template (see column 18, lines 14-18 and column 19, lines 46-49 and 57-60).

As to claim 29, Scalzi teaches a template according to claim 28 in which said bit filling routine is uniquely associated with said template (see column 18, lines 14-18 and column 19, lines 46-49 and 57-60).

As to claim 30, Scalzi teaches a template according to claim 26 in which said template identifier is created by the concatenation of said control part of said source instruction (see column 14, lines 31-40).

As to claim 33, Scalzi teaches a computer program for translating binary code instructions from a source format to a format for processing by a target processor, in accordance with the method of claim 1 (see column 1, lines 10-15).

As to claim 34, Scalzi teaches a computer program according to claim 33 in which said templates are implemented as routines in said computer program (see column 10, lines 14-17).

Claim Rejections - 35 USC § 103

4.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5.   Claims **11-12, 23-24,31 and 32** are rejected under 35 U.S.C 103(a) as being unpatentable over Scalzi (US Patent 6,075,937).

As to claims 11, Scalzi teaches the limitations of claim 1, but does not specifically teach that the source format is 32 bit and the target format is 64 bit. However, Scalzi discloses that the source format of his invention is S/390 and the target format is PowerPC. It is well known in the art that S/390 has a 32-bit architecture and the PowerPC has a 64-bit architecture. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made that the source format

is 32-bit and the target format is 64-bit in Scazi's invention, as his method can operate

between any platform or processor type.

As to claim 12, Scalzi teaches the limitations of claim 1, but does not

specifically teach that the source format is PA-RISC and the target format is Itanium[TM]

code. Instead, he teaches the source format to be S/390 code and the target format to

be PowerPC code. However, it is well known in the art that PA-RISC is a 32-bit

architecture and Itanium is a 64-bit architecture, which share the same characteristics

as the source and target formats disclosed by Scalzi. Therefore, it would have been

obvious to one having ordinary skill in the art at the time the invention was made to

replace the source and target formats of Scalzi's invention with any other code formats,

as Scalzi's method can operate between any platform or processor type.

As to claims 23, Scalzi teaches the limitations of claim 13, but does not

specifically teach that the source format is 32 bit and the target format is 64 bit.

However, Scalzi discloses that the source format of his invention is S/390 and the target

format is PowerPC. It is well known in the art that S/390 has a 32-bit architecture and

the PowerPC has a 64-bit architecture. Therefore, it would have been obvious to one

having ordinary skill in the art at the time the invention was made that the source format

is 32-bit and the target format is 64-bit in Scazi's invention, as his method can operate

between any platform or processor type.

As to claim 24, Scalzi teaches the limitations of claim 13, but does not specifically

teach that the source format is PA-RISC and the target format is Itanium[TM] code.

Instead, he teaches the source format to be S/390 code and the target format to be

PowerPC code. However, it is well known in the art that PA-RISC is a 32-bit architecture and Itanium is a 64-bit architecture, which share the same characteristics as the source and target formats disclosed by Scalzi. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to replace the source and target formats of Scalzi's invention with any other code formats, as Scalzi's method can operate between any platform or processor type.

As to claim 31, Scalzi teaches the limitations of claim 25, but does not specifically teach that the source format is 32 bit and the target format is 64 bit. However, Scalzi discloses that the source format of his invention is S/390 and the target format is PowerPC. It is well known in the art that S/390 has a 32-bit architecture and the PowerPC has a 64-bit architecture. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made that the source format is 32-bit and the target format is 64-bit in Scazi's invention, as his method can operate between any platform or processor type.

As to claim 32, Scalzi teaches the limitations of claim 25, but does not specifically teach that the source format is PA-RISC and the target format is Itanium^{TM} code. Instead, he teaches the source format to be S/390 code and the target format to be PowerPC code. However, it is well known in the art that PA-RISC is a 32-bit architecture and Itanium is a 64-bit architecture, which share the same characteristics as the source and target formats disclosed by Scalzi. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to

replace the source and target formats of Scalzi's invention with any other code formats, as Scalzi's method can operate between any platform or processor type.

6.   Claims **6 and 18** are rejected under 35 U.S.C. 103(a) as being unpatentable over Scalzi (US Patent 6,075,937) in view of Lee (US Patent 5,828,884).

As to claim 6, Scalzi teaches the limitations of claim 3, but does not specifically teach the transformation of data of one type of endianness to data of another type of endianness. Lee is cited to teach a method for converting data between different endian formats similar to Scalzi's. Lee teaches a method for compiling a software program and executing the program on a system that converts data between little endian and big endian formats (see Abstract). It would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the teachings of Scalzi and Lee because Lee provides a method that allows software developers to develop more efficient, portable, and bug-free code with respect to byte ordering issues.

As to claim 18, Scalzi teaches the limitations of claim 15, but does not specifically teach the transformation of data of one type of endianness to data of another type of endianness. Lee is cited to teach a method for converting data between different endian formats similar to Scalzi's. Lee teaches a method for compiling a software program and executing the program on a system that converts data between little endian and big endian formats (see Abstract). It would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the teachings of Scalzi and Lee because Lee provides a method that allows software

developers to develop more efficient, portable, and bug-free code with respect to byte ordering issues.

7.   Claims **9 and 21** are rejected under 35 U.S.C. 103(a) as being unpatentable over Scalzi (US Patent 6,075,937) in view of Hughes et al. (US Patent 6, 519, 768 B1).

As to claim 9, Scalzi teaches the limitations of claim 1, but does not specifically state that the translation is carried out at runtime of an emulated application program. Hughes, however, is cited to teach an instruction translation method that is similar to Scalzi's. Hughes teaches a translation process that is performed at run time (see column 3, lines 66-67). It would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the teachings of Scalzi and Hughes because Hughes provides an improved translation technique that reduces many errors associated with the translation of instructions. In addition, Hughes also provides a new technique for improving the efficiency of block oriented code translation.

As to claim 21, Scalzi teaches the limitations of claim 13, but does not specifically state that the translation is carried out at runtime of an emulated application program. Hughes, however, is cited to teach an instruction translation method that is similar to Scalzi's. Hughes teaches a translation process that is performed at run time (see column 3, lines 66-67). It would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the teachings of Scalzi and Hughes because Hughes provides an improved translation technique that reduces many errors associated with the translation of instructions. In addition, Hughes also provides a new technique for improving the efficiency of block oriented code translation.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cheneca P. Smith whose telephone number is (571) 270-1651. The examiner can normally be reached on Monday-Friday 7:30-5:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Xiao Wu can be reached on (571) 272-7761. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

C.S.
3/14/07

XIAO WU
SUPERVISORY PATENT EXAMINER